

# SEQUENCE LISTING

<110> Nadler, Lee M.  
Hahn, William C.  
Schultz, Joachim L.  
Vonderheide, Robert H.

<120> CANCER IMMUNOTHERAPY AND DIAGNOSIS USING  
UNIVERSAL TUMOR ASSOCIATED ANTIGENS, SUCH AS THE TELOMERASE  
CATALYTIC SUBUNIT (hTERT), AND METHODS FOR IDENTIFYING  
UNIVERSAL TUMOR ASSOCIATED ANTIGENS

<130> 50059/007002

<140> US 09/830,400

<141> 2001-04-25

<150> PCT/US99/25438

<151> 1999-10-29

<150> US 60/106,106

<151> 1998-10-29

<160> 72

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 9

<212> PRT

<213> Homo sapiens

<400> 1

Ile Leu Ala Lys Phe Leu His Trp Leu

1

5

<210> 2

<211> 9

<212> PRT

<213> Homo sapiens

<400> 2

Lys Leu Phe Gly Val Leu Arg Leu Lys

1

5

<210> 3

<211> 9

<212> PRT

<213> Homo sapiens

<400> 3

Glu Leu Leu Arg Ser Phe Phe Tyr Val

1

5

<210> 4  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 4  
Arg Leu Val Asp Asp Phe Leu Leu Val  
1 5

<210> 5  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 5  
Phe Leu Trp Gly Pro Arg Ala Leu Val  
1 5

<210> 6  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 6  
His Phe Leu Leu Trp Lys Leu Ile Ala  
1 5

<210> 7  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 7  
Ala His Thr Lys Asp Gly Phe Asn Phe  
1 5

<210> 8  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 8  
Lys Leu Thr Arg His Arg Val Thr Tyr Val  
1 5 10

<210> 9  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 9  
Leu Leu Leu Asp Thr Arg Thr Leu Glu Val  
1 5 10

<210> 10  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 10  
Phe Leu His Trp Leu Met Ser Val Tyr Val  
1 5 10

<210> 11  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 11  
Phe Leu Leu Lys Leu Thr Arg His Arg Val  
1 5 10

<210> 12  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 12  
Trp Leu Met Ser Val Tyr Val Val Glu Leu  
1 5 10

<210> 13  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 13  
Gly Leu Phe Asp Val Phe Leu Arg Phe Met  
1 5 10

<210> 14  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 14  
Leu Leu Ala Arg Cys Ala Leu Phe Val  
1 5

<210> 15  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 15  
Trp Leu Cys His Gln Ala Phe Leu Leu  
1 5

<210> 16  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 16  
Val Glu Leu Leu Arg Ser Phe Phe Tyr Val  
1 5 10

<210> 17  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 17  
Phe Leu Trp Gly Pro Arg Ala Leu Val  
1 5

<210> 18  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 18  
Leu Leu Phe Gly Tyr Pro Val Tyr Val  
1 5

<210> 19  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 19  
Phe Leu Trp Gly Pro Arg Ala Leu Val  
1 5

<210> 20  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 20  
Gly Ile Leu Gly Phe Val Phe Thr Leu  
1 5

<210> 21  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 21  
Tyr Ala Glu Thr Lys His Phe Leu Tyr  
1 5

<210> 22  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 22  
Val Val Glu Leu Leu Arg Ser Phe Phe Tyr  
1 5 10

<210> 23  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 23  
Ile Ser Asp Thr Ala Ser Leu Cys Tyr  
1 5

<210> 24  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 24  
Glu Val Asp Pro Ile Gly His Leu Tyr  
1 5

<210> 25  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 25  
Cys Thr Glu Leu Lys Leu Ser Asp Tyr  
1 5

<210> 26  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 26  
Gly Leu Phe Asp Val Phe Leu Arg Phe  
1 5

<210> 27  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 27  
Arg Leu Arg Glu Glu Ile Leu Ala Lys  
1 5

<210> 28  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 28  
Ile Leu Arg Gly Ser Val Ala His Lys  
1 5

<210> 29  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 29  
Tyr Val Thr Glu Thr Thr Phe Gln Lys  
1 5

<210> 30  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 30  
Gln Thr Val Cys Thr Asn Ile Tyr Lys  
1 5

<210> 31  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 31  
Lys Thr Phe Leu Arg Thr Leu Val Arg  
1 5

<210> 32  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 32  
Arg Leu Arg Glu Glu Ile Leu Ala Lys  
1 5

<210> 33  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 33  
Gly Val Gly Gly Pro Gly Gly His Lys  
1 5

<210> 34  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 34  
Ile Val Thr Asp Phe Ser Val Ile Lys  
1 5

<210> 35  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 35  
Thr Tyr Val Pro Leu Leu Gly Ser Leu  
1 5

<210> 36  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 36  
Cys Tyr Gly Asp Met Glu Asn Lys Leu  
1 5

<210> 37  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 37  
Phe Tyr Arg Lys Ser Val Trp Ser Lys Leu  
1 5 10

<210> 38  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 38  
Ala Tyr Gln Val Cys Gly Pro Pro Leu  
1 5

<210> 39  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 39  
Arg Tyr Leu Lys Asp Gln Gln Leu Leu  
1 5

<210> 40  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 40  
Ala Tyr Gly Leu Asp Phe Tyr Ile Leu  
1 5

<210> 41  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 41  
Arg Leu Phe Phe Tyr Arg Lys Ser Val  
1 5

<210> 42  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 42  
Leu Gln Leu Pro Pro His Gln Gln Val  
1 5

<210> 43  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 43  
Arg Leu Gly Pro Gln Gly Trp Arg Leu  
1 5

<210> 44  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 44  
Ser Leu Gln Glu Leu Thr Trp Lys Met  
1 5

<210> 45  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 45  
Asn Val Leu Ala Phe Gly Phe Ala Leu  
1 5



<210> 46  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 46  
Val Leu Leu Lys Thr His Cys Pro Leu  
1 5

<210> 47  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 47  
Phe Leu Leu Val Thr Pro His Leu Thr  
1 5

<210> 48  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 48  
Thr Leu Thr Asp Leu Gln Pro Tyr Met  
1 5

<210> 49  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 49  
Ile Leu Ser Thr Leu Leu Cys Ser Leu  
1 5

<210> 50  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 50  
Leu Met Ser Val Tyr Val Val Glu Leu  
1 5

<210> 51  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 51  
Phe Leu Asp Leu Gln Val Asn Ser Leu  
1 5

<210> 52  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 52  
Leu Leu Gly Ala Ser Val Leu Gly Leu  
1 5

<210> 53  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 53  
Cys Leu Lys Glu Leu Val Ala Arg Val  
1 5

<210> 54  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 54  
Leu Leu Asp Thr Arg Thr Leu Glu Val  
1 5

<210> 55  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 55  
Gly Leu Leu Leu Asp Thr Arg Thr Leu  
1 5

<210> 56  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 56  
Phe Leu Arg Thr Leu Val Arg Gly Val  
1 5

<210> 57  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 57  
Tyr Met Arg Gln Phe Val Ala His Leu  
1 5

<210> 58  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 58  
Arg Leu Thr Glu Val Ile Ala Ser Ile  
1 5

<210> 59  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 59  
Gln Val Trp Lys Asn Pro Thr Phe Phe Leu  
1 5 10

<210> 60  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 60  
Val Leu Gln Leu Pro Phe His Gln Gln Val  
1 5 10

<210> 61  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 61  
Phe Leu Leu Ser Ser Leu Arg Pro Ser Leu  
1 5 10

<210> 62  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 62  
Leu Leu Leu Arg Leu Val Asp Asp Phe Leu  
1 5 10

<210> 63  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 63  
Lys Met Ser Val Arg Gly Cys Ala Trp Leu  
1 5 10

<210> 64  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 64  
Arg Leu Cys Glu Arg Gly Ala Lys Asn Val  
1 5 10

<210> 65  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 65  
Leu Leu Leu Arg Arg Val Gly Asp Asp Val  
1 5 10

<210> 66  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 66  
Gly Leu Leu Gly Ala Ser Val Leu Gly Leu  
1 5 10

<210> 67  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 67  
Leu Leu Leu Gln Ala Tyr Arg Phe His Ala  
1 5 10

<210> 68  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 68  
Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu  
1 5 10

<210> 69  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 69  
Val Gln Trp Leu Cys His Gln Ala Phe Leu  
1 5 10

<210> 70  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 70  
Ala Leu Val Ala Gln Cys Leu Val Cys Val  
1 5 10

<210> 71  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 71  
Arg Leu Val Asp Asp Phe Leu Leu Val Thr  
1 5 10

<210> 72  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 72  
Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu  
1 5 10